87. A maize plant produced by a method comprising the steps of:

contacting at least one immature embryo from a maize plant with *Agrobacterium* capable of transferring at least one gene to the embryo;

co-cultivating the embryo with *Agrobacterium* for a time sufficient to produce a transformed embryo; and

culturing the transformed embryo in a medium comprising N6 salts, an antibiotic capable of inhibiting the growth of *Agrobacterium*, and a selective agent to select for the transformed embryo;

regenerating a transformed maize plant, wherein the maize plant is recalcitrant to transformation by *Agrobacterium*.

88. The maize plant of claim 87, wherein the plant is field maize.

89. A maize seed produced by the plant of claim 87.--

REMARKS

Reconsideration of the present application is respectfully requested. Formal drawings will be submitted upon receipt of a notice of allowance. Claims 62-73 have been canceled without prejudice. Support for maize other than A188 or a hybrid of A188 is found throughout the specification, for example the bottom of page 2 and page 25. Support for inbred or hybrid other than B73 is found on page 30. Support for pedigree line is found on page 7. Support for elite line is found on page 8.

Claims 62-73 are rejected under 35 U.S.C. §112, first paragraph as containing subject matter which was not described in the specification. The Examiner states that the specification does not provide enablement or written description for the claimed step in which said antibiotic is applied during transformation or sequentially after transformation, in the absence of a time interval to allow the bacteria to transfer plasmid DNA into the target cell.

Claims 62-73 have been canceled and rewritten to more clearly define the invention. In particular claim 87 requires that the antibiotic is present in the step of "culturing the transformed embryo". It is believed that this requirement overcomes the Examiner's objection.

It is confirmed that the claims of the invention were commonly owned at the time of invention.

Claim 62-73 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Grimsley *et al.* (US Patent #5,569,597).

The Examiner states that Grimsley *et al.* disclose *Zea mays* cells and plants which have been prepared by a process in which the cell of the immature embryos have been contacted with Agrobacterium comprising at least one gene and therefore the cells and plant produced are identical to the present claimed composition.

The Examiner concludes that the cells and regenerated plants are identical to applicants claimed composition since they are derived from the same source and possess the same characteristics.

The new claims distinguish over Grimsley *et al.* by reciting a plant that has been "stably transformed".

Grimsley *et al.* developed a sensitive assay system to demonstrate that foreign DNA was introduced into corn cells. This involved a geminiviral-based replicating plasmid, that was also capable of dispersing itself through action of its encoded movement protein.

Grimsley *et al.* placed this viral DNA into an Agrobacterium vector, treated maize tissues (i.e. wounded tissue around the apical meristem region), and although the initial introduction of DNA into maize cells was initially undetectable, the DNA started replicating prolifically and then it could be easily detected.

a. This amplified plasmid would give very high expression levels from gene-expression cassettes carried on this plasmid.

b. Southern analysis revealed that this plasmid DNA remained in plasmid form; it did not integrate (thus no true transformation).

c. The foreign gene-expression cassettes or their activity were never detected in progeny (no genetic inheritance - no integrative transformation!).

Thus Grimsley *et al.* provide a method to introduce a perpetuating plasmid containing expression cassettes - useful for gene testing in plants, but not useful transformation. Other labs have seen the same result with this method. Without further changes to Grimsley *et al.* system, gene integration does not occur.

The new claims further distinguish over Grimsley *et al.* by defining a source other than the source used by Grimsley *et al.* The present claimed plants exhibit desirable genetics and are difficult to transform.

Claim 74 also distinguishes over Grimsley *et al.* by reciting "the maize plant is recalcitrant to transformation". Grimsley *et al.* transform lines that can be successfully *Agroinfected.* Col. 34, lines 32-34.

Claim 77 also distinguishes over Grimsley *et al.* by reciting "the maize plant is a field corn other than A188, B73 or a hybrid of A188 or B73".

Claim 79 also distinguishes over Grimsley *et al.* by reciting "the maize plant is an elite maize plant".

Claim 82 also distinguishes over Grimsley *et al.* by reciting "the maize plant is a field corn more difficult to transform by *Agrobacterium* than A188, B73 or a hybrid of A188 or B73".

Claim 84 also distinguishes over Grimsley *et al.* by reciting "the maize plant is a pedigree inbred or hybrid of a pedigree inbred".

Claim 87 also distinguishes over Grimsley *et al.* by reciting a maize plant produced by a particular method that requires a maize plant recalcitrant to transformation with Agrobacterium.

Transformation of elite genotypes (recalcitrant) with *Agrobacterium* is advantageous to the seed industry. Breeding time required to produce a commercial product is reduced. There is greater transformation flexibility and control when using

Agrobacterium compared to bombardment methods. Prior to the disclosure of the present application, it was not possible to transform elite maize lines with *Agrobacterium*.

In view of the foregoing remarks, withdrawal of the outstanding rejections and allowance of all of the remaining claims is respectfully requested.

Respectfully submitted,

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